

Claim 1 was rejected under 35 U.S.C. §112, second paragraph. The Office Action contends that the recitation that "wherein a Poisson's ratio of the tubular housing is less than the solid material" renders the claim indefinite "because it is a statement of desired result with no specific structure to attain it." To the contrary, however, as discussed during the personal interview, a component's Poisson's ratio is indeed a structural characteristic of the particular component. Applicant respectfully submits that those of ordinary skill in the art could readily modify parts of a particular component to affect its Poisson's ratio. For example, the present specification on page 6 describes a preferred exemplary embodiment of the invention, wherein the tubular housing 12 is formed of a fiber-reinforced polymer. As would be apparent to those of ordinary skill in the art, in order to keep the Poisson's ratio of the tubular housing less than a filler material, increased strength of the tubular housing can be attained by adjusting the fiber architecture and the thickness of the tube.

During the personal interview, Examiner Nguyen agreed that the §112 rejection would be withdrawn.

Claims 1-13 and 21 were rejected under 35 U.S.C. §103(a) over U.S. Patent No. 5,761,875 to Oliphant et al. in view of U.S. Patent No. 5,960,597 to Schwager and U.S. Patent No. 3,086,273 to Welborn. This rejection is respectfully traversed.

In the "Response to Arguments" section in paragraph 7 of the Office Action, the Office Action provides that the Applicant argued that the rejection fails to address the limitation of the claimed Poisson's ratio. To the contrary, however, as discussed during the interview, in the Amendment filed November 19, 2001, the Applicant additionally

argued that the Office Action fails to establish a *prima facie* case of obviousness. Still further, the Applicant explained that an important feature of the present invention was apparently overlooked in the Office Action. Regrettably, this important feature of the invention was also overlooked in the January 23, 2002 Office Action.

In an effort to exemplify this feature of the invention, although independent claims 1 and 21 are already directed to a construction beam comprising, *inter alia*, a tubular housing, independent claims 1 and 21 have been amended to recite that the tubular housing forms part of the construction beam.

In this context, as described during the personal interview, Oliphant describes a reinforced concrete pole provided with an attachment mechanism for attachments to the pole. The concrete pole is generally conventional in construction and thus lacks the claimed tubular housing forming part of a construction beam.

Schwager describes a method for post-tensioning columns, wherein concrete columns are wound with an external cable to increase column performance for earthquake forces and the like. Schwager similarly lacks the claimed tubular housing of the construction beam. Moreover, the post-tensioning described in Schwager generally relates to post-tensioning the cable that is wrapped around the concrete column. Certainly, this structure is considerably distinct from that of the claimed invention.

Finally, Welborn describes a method for pre-stressing concrete, wherein post-tensioning tendons are coated with a concrete retardant to protect the tendons from bonding to the concrete so that after the concrete has cured, proper tensioning of the tendon can take place. See, for example, column 3, lines 31-73. Similar to Oliphant and

Schwager, Welborn lacks the tubular housing forming part of the construction beam as claimed.

Applicant thus respectfully submits that the rejection is misplaced.

In addition, claim 1 specifies that a Poisson's ratio of the tubular housing is less than the solid material to thereby confine the solid material. As discussed during the interview, claim 1 has been clarified to recite that "the tubular housing is constructed such that a Poisson's ratio of the tubular housing is less than the solid material to thereby confine the solid material . . . ." As noted previously, the structural configuration of the tube to effect the claimed Poisson's ratio differences was an important discovery for enabling the construction beam to function properly in the absence of pre-stressing. The Office Action does not even refer to a single teaching or remote suggestion in any of the cited references with respect to the claimed Poisson's ratio. Indeed, none of the cited references even remotely appreciates the relationship of the Poisson's ratio of a tubular housing and solid material filling the tubular housing as claimed. Rather, a Poisson's ratio relative to a solid filling material is not pertinent to their respective constructions.

For these reasons also, Applicant respectfully submits that the rejection is misplaced.

With respect to dependent claims 2-13, Applicant submits that these claims are allowable at least by virtue of their dependency on an allowable independent claim. In addition, claim 7 recites that the tubular housing is formed by a fiber-reinforced polymer. Since the cited references lack the claimed tubular housing, this structure is also lacking

in the art of record. Further specifications for the tubular housing are set forth in claim 12.

Reconsideration and withdrawal of the rejection are thus respectfully requested.

Claims 14-20 were rejected under 35 U.S.C. §103(a) over Oliphant in view of Welborn and Schwager. Applicant respectfully traverses this rejection for reasons identical to those set forth in the November 19, 2001 Amendment. Additionally, in an effort to clarify an important distinction of the invention over the prior art references, claim 14 has been amended to recite that the respective tubular housings form part of each of the construction beams. As noted during the interview, this feature of the invention was not addressed in the outstanding Office Action.

Reconsideration and withdrawal of the rejection are thus respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully submits that the claims are patentable over the art of record and that the application is in condition for allowance. Should the Examiner believe that anything further is desirable in order to place the application in condition for allowance, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number listed below.

Prompt passage to issuance is earnestly solicited.

IYER

Serial No. 09/620,134

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version With Markings To Show Changes Made."

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By: Alan M. Kagen

Alan M. Kagen

Reg. No. 36,178

AMK:jl  
1100 North Glebe Road, 8th Floor  
Arlington, VA 22201-4714  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100

**VERSION WITH MARKINGS TO SHOW CHANGES MADE****IN THE CLAIMS**

1. (Amended) A construction beam comprising a tubular housing filled with a solid material having a Poisson's ratio, wherein the tubular housing is constructed such that a Poisson's ratio of the tubular housing is less than the solid material to thereby confine the solid material, the tubular housing forming part of the construction beam.

14. (Amended) A deck system comprising a plurality of construction beams secured side-to-side, wherein each of the construction beams comprises a tubular housing filled with a solid material having a Poisson's ratio, wherein the tubular housing is constructed such that a Poisson's ratio of the tubular housing is less than the solid material to thereby confine the solid material, the respective tubular housings forming part of each of the construction beams.

17. (Twice Amended) A method of forming a construction beam comprising filling a tubular housing with a solid material having a Poisson's ratio, the tubular housing forming a part of the construction beam, wherein the tubular housing is constructed such that a Poisson's ratio of the tubular housing is less than the solid material to thereby confine the solid material.

21. (Amended) A construction beam comprising a tubular housing filled with a solid material and at least one prestressed reinforcing rod embedded in the solid material, the tubular housing forming part of the construction beam.